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ABSTRACT

This booklet is intended to help mainstreamed mentally retarded, emotionally disturbed, or learning disabled high school students acquire a basic understanding of the responsibilities and working conditions of local truck drivers and to practice basic math skills necessary in the occupation. The first section provides a brief introduction to the occupation by focusing upon those job tasks of a truck driver with which the student is likely to be familiar. The next two sections deal with the work environment of the typical truck driver and the training, education, and experience needed for the occupation. Exercises addressing basic math skills used by truck drivers are provided. Various suggestions are listed for students interested in further exploring the occupation of truck driver. A glossary and answer sheet conclude the booklet. (MN)

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MATH on the job

Local Truck Driver

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MATH ON THE JOB:

LOCAL TRUCK DRIVER

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HAVE YOU EVER...

- driven or ridden in a van or pickup truck?
- helped pack a car for a long trip?
- signed for a package that was delivered to your home?
- looked for a street address while riding in a car?
- helped move a big load from one place to another?

If you have, then you have some idea about the work that a local truck driver does. This booklet will help you learn about the work of a local truck driver and how math is important to do the job.

WHAT DOES A LOCAL TRUCK DRIVER DO?

The local truck driver's main task is to deliver goods and packages to customers. How does a local truck driver do this? A local truck driver--

- receives assignments from a **dispatcher***
- plans the **delivery route****
- checks the condition of the truck
- drives the **light truck***** or van to the delivery stops
- unloads the goods and packages for the customer
- asks the customer to sign a receipt
- keeps records of the day's activities

DEFINITIONS

*A dispatcher is the person who decides each day what deliveries will be made and who will make them.

**A delivery route is the roads a local truck driver takes to make all the stops or deliveries.

***A light truck weighs less than three tons. Examples are mail trucks, bread trucks, and department store delivery trucks.

Math is very important to the work of a local truck driver. The driver needs to know how to--

- read and write whole numbers, decimals, and fractions
- add, subtract, multiply, and divide
- measure weight
- measure time
- measure distance

A local truck driver uses these skills every day. The driver uses these skills to plan the delivery route, fill out company forms, and keep records of the day's travels.

A local truck driver uses math to measure time.

EXAMPLE

Local truck drivers must be able to tell time so they know how many deliveries they can make per day. Let's say you left the loading dock at 8:45 a.m. to deliver a package to the warehouse. The clock on the right shows the time you arrived. How long did the trip take?

The trip took 30 minutes.

NOW YOU TRY IT

Practice Exercise A

1. It takes 55 minutes to get to the airport from the loading dock. You leave the dock at 2:20. What time will you get to the airport?

2. You leave a customer's house at 10:05 and arrive at a second customer's house at 10:50. How long did this trip take?

3. It takes 20 minutes for you to get to the east side of town. You have two deliveries to make there. It takes 10 minutes to drive from the first customer to the second. It takes another 20 minutes for you to return to the starting point. How long will the delivery trip take in all?

4. You leave your loading dock at 7:30 a.m. You drive 35 minutes, take 10 minutes at the first stop, drive 45 minutes, take 5 minutes at the second stop, drive 20 minutes, take a 15-minute coffee break, and drive 25 minutes back to the loading dock. What time do you get back from this trip?

5. You have three deliveries to make. It will take you 25 minutes to get to the first delivery stop, 15 minutes between each delivery, and 25 minutes to get back. At what time should you leave to get back at 3:30?

A local truck driver uses math to measure miles driven.

EXAMPLE

In your truck you will have an instrument for measuring miles traveled. This instrument is called an odometer and measures miles to the tenth of a mile. To measure the miles traveled, you must read the odometer at the start of the trip. You also must read the odometer at the end of the trip.

Let's assume that you are driving a load of furniture across town. At the start of your trip your odometer reads 64832.5. At the end of your trip, your odometer reads 64859.3. How many miles have you traveled?

To find the answer, subtract the beginning odometer reading from the ending odometer reading.

$$64859.3 - 64832.5 = 26.8$$

You have traveled 26.8 miles.

NOW YOU TRY IT

Practice Exercise B

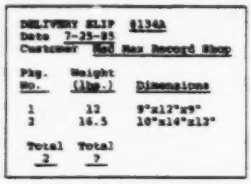
How many miles did each local truck driver travel?

	Beginning Odometer Reading	Ending Odometer Reading	Miles Traveled
6.	82946.3	82998.1	?
7.	32614.4	32728.1	?
8.	49532.5	49606.3	?
9.	84936.7	85026.4	?
10.	91239.8	91288.8	?

A local truck driver uses math to fill out delivery forms.

EXAMPLE

One company requires drivers to fill out delivery slips for every customer. You deliver a 12-pound box and a 16 1/2 pound box to the same customer. This delivery slip shows the total number of packages delivered and the pounds per box. What is the combined weight for this delivery?



DELIVERY SLIP #134A
Date 7-25-85
Customer Mel Rex Record Shop

Pkg. No.	Weight (lbs.)	Dimensions
1	12	9"x12"x9"
2	16.5	10"x14"x12"
Total 2	Total 7	

The combined weight is 28.5 pounds.

NOW YOU TRY IT

Practice Exercise C

11. You have the following packages to deliver to one customer: one weighing 8.3 pounds, one weighing 4.7 pounds, and one weighing 12 pounds. What is the total number of packages? What is the total weight?

12. You have two C.O.D.* packages to deliver to a customer. The first one requires you to collect $11.95, and the second one requires $24.25. What should you write under "Total Amount Due From Customer" on the delivery slip?

13. Your delivery company agrees to deliver a load of boxes to the local airport. The company will charge $.79 for each pound delivered. If all the delivery forms total 185 pounds, what amount should be entered under "Total Delivery Fees Due?"

DEFINITION

*C.O.D. means "cash on delivery." The customer must pay the local truck driver a specified amount for the package before it can be delivered.

A local truck driver uses math to estimate weight.

EXAMPLE

Each state sets maximum weight limits for trucks. The driver of an overweight truck can be fined a large amount of money. The driver must make sure that the total weight of the truck and the goods in the truck does not exceed the weight limit. The driver does this by calculating the gross weight of the truck.

To calculate the gross weight, the driver adds the weight of the truck and the weight of the goods in the truck. Let's assume that the maximum weight limit is 40,000 pounds. Assume that the truck weighs 20,000 pounds, that the truck is carrying 100 boxes, and that each box weighs 100 pounds. Is the gross weight of the truck legal?

Step 1. Calculate the total weight of the goods.
100 boxes x 100 pounds = 10,000 pounds

Step 2. Find the gross weight by adding the weight of the truck to the total weight of the goods.
20,000 + 10,000 = 30,000 gross weight

Step 3. Compare the gross weight you calculated to the maximum gross weight allowed. If the gross weight you calculated is less than the maximum gross weight allowed, then the load is legal. If not, then the load is not legal. For this example, 30,000 pounds is less than the maximum gross weight. This load is legal.

NOW YOU TRY IT

Practice Exercise D

Is the gross weight of each truck legal?

	Maximum Gross Weight Allowed	Weight of Truck	Number of Boxes	Weight of Each Box
14.	24,000	10,000	200	40 pounds
15.	34,000	12,000	375	60 pounds
16.	42,500	20,000	650	35 pounds
17.	40,000	15,000	850	20 pounds
18.	35,000	12,500	310	75 pounds
19.	28,000	10,250	178	100 pounds
20.	37,250	12,500	268	92 pounds

WHERE DOES A LOCAL TRUCK DRIVER WORK?

A local truck driver can work for many different types of businesses. The driver may work for a--

- manufacturer
- florist
- lumber yard
- furniture store
- department store
- food wholesaler
- hardware store
- package delivery service

A local truck driver may work with many different people, such as--

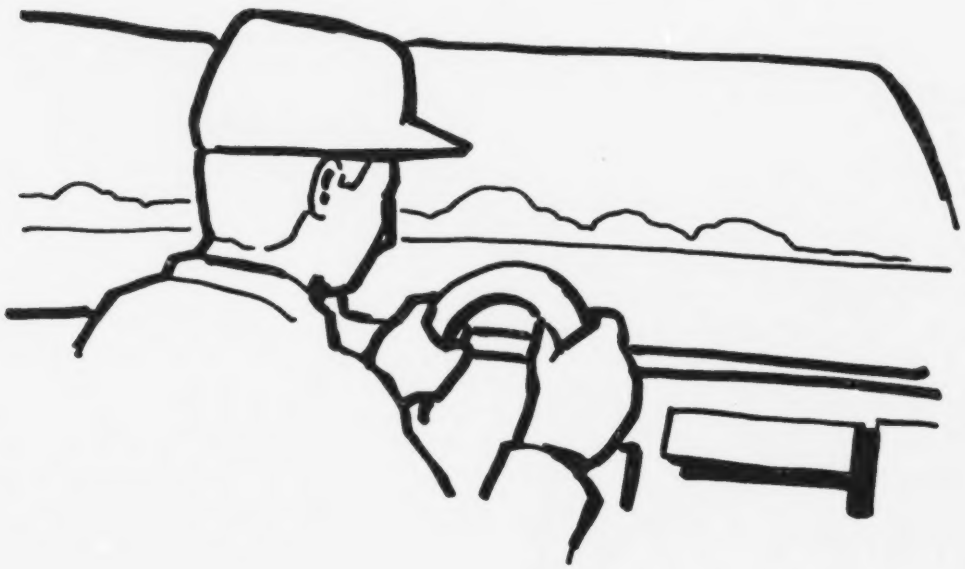
- dispatchers who give the assignments
- material handlers or dock workers who load and unload the truck
- mechanics who repair the truck
- other local truck drivers who work for the same company

A local truck driver may have a truck driver's helper working with him or her. The helper helps load and unload the goods at the customer's place. Sometimes, the helper may drive the truck to learn how to be a good driver.

A local truck driver also works with customers and should be friendly and polite to them. The driver should listen to their complaints and try to help them solve problems. The driver should report any complaints or problems to the supervisor.

A local truck driver uses special equipment. The driver may use--

- a hand truck* to move large or bulky items
- a dolly** to move heavy objects
- ropes or straps to tie large objects against the side of the truck
- emergency flares to put outside the truck if it breaks down
- mechanic's tools to make minor repairs to the truck



DEFINITIONS

*A hand truck is a metal frame that has handles at one end and wheels at the other. A metal edge is slid under a heavy load and the load is tilted off the ground. The load can then be wheeled to a different place.

**A dolly is a small platform on wheels. The load is put on the top of the platform and can be wheeled to a different place.

The delivery route of a local truck driver will depend on where the driver works. The route may be an assigned route or it could be a different route every day. The driver may pick up a loaded truck early in the morning and spend the rest of the day delivering the goods. Or the driver may make several round trips from the company's place of business to only one or two customers.

A local truck driver might work for a business which delivers its own products, such as a department store, food store, or lumber yard. The driver might work for a trucking company and deliver many different products to many places. Or the driver might work for a government agency and deliver goods from one office to another office.

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IF YOU WOULD LIKE TO

LEARN MORE ABOUT THE

WORK OF A LOCAL TRUCK DRIVER,

READ ON

WHAT TRAINING, EDUCATION, AND EXPERIENCE DO YOU NEED TO BECOME A LOCAL TRUCK DRIVER?

While a local truck driver doesn't need much training to do the job, in most states, the driver needs a **chauffeur's license***. To get a chauffeur's license, a driver may have to pass a physical examination and have good hearing and good vision. The driver may have to take a written test on driving rules and may be given a driving test. You can get more information on how to get a chauffeur's license from your state's motor vehicle department.

A local truck driver needs to know many things. The driver needs to know how to--

- read and write in English
- drive a truck
- use a map
- make minor repairs to a truck
- move heavy or bulky objects without getting hurt and without hurting other people or the product
- obey traffic laws and avoid accidents
- be nice to customers

DEFINITION

*A <u>chauffeur's license</u> is a special driving permit for persons employed to drive motor vehicles.

The best way to learn these things is to take driver training, automotive mechanics, business math, and map reading classes in high school.

Some private and public technical schools offer training to become a truck driver. However, graduating from one of the classes does not necessarily mean it will be easier to find a job. If you are interested in attending one of these schools, you should check with local employers to see if it will help.

One way to get a job as a local truck driver is to get a job as a material handler, dock worker, or truck driver's helper. In these jobs, you will learn about the trucking industry and may have an opportunity to drive trucks. By showing your employer that you are a responsible person with good driving skills, you may get the chance to move up. Showing that you have math skills will also help you.

DO YOU WANT TO DO MORE LOCAL TRUCK DRIVER'S MATH?

Practice Exericse E

21. It takes 42 minutes to get to the airport from the loading dock. You leave the dock at 11:45 a.m. What time will you get to the airport?

22. You leave a customer's house at 9:30 a.m. and arrive at a second customer's house at 10:05 a.m. How long did this trip take?

23. It takes 35 minutes for you to get to the west side of town. You have three deliveries to make there. It takes 10 minutes to drive from the first customer to the second customer. It takes 6 minutes to drive from the second customer to the third customer. It takes another 35 minutes for you to return. How long does this trip take?

24. You leave your loading dock at 8:10 a.m. You drive 45 minutes, take 15 minutes at the first stop, drive 35 minutes, take 20 minutes at the second stop, drive 18 minutes, take a 15 minute coffee break, and drive 32 minutes back to the dock. What time will you get back from this trip?

25. You have three deliveries to make. It takes 30 minutes to get to your first stop, 20 minutes between deliveries, and 25 minutes to return. At what time should you leave to get back at 12:00?

Practice Exercise F

How many miles did each local truck driver travel?

	Beginning Odometer Reading	Ending Odometer Reading	Miles Traveled
26.	12345.6	12355.8	?
27.	53426.1	53559.3	?
28.	23728.4	23814.6	?
29.	44692.0	44739.9	?
30.	78201.0	78311.2	?

Practice Exercise G

Use the following delivery slips to answer questions 31-33.

DELIVERY SLIP #135A
Date 8-12-85
Customer Dead or Alive Bait Shop

Pkg. No.	Weight (lbs.)	Dimensions
1	12.5	---------
2	3.0	---------
3	8.6	---------
4	4.1	---------
Total:	Total:	
	(a)	(b)

DELIVERY SLIP #136A
Date 8-12-85
Customer Talking Heads Puppet Store

Pkg. No.	Weight (lbs.)	Dimensions
1	23.7	----------
2	2.8	----------
3	17.0	----------
4	13.9	----------
5	37.4	----------
Total:	Total:	
	(c)	(d)

31. What amounts should be placed in the places labeled (a), (b), (c), and (d)?

32. Your company charges $1.50 to deliver any package under 10 pounds. The charge is $1.75 for any package 10 pounds or more. How much does the Dead or Alive Bait Shop owe?

33. You company charges $1.25 to deliver any package under 10 pounds. The charge is $1.50 for any package 10 pounds or more. How much does the Talking Heads Puppet Store owe?

Practice Exercise H

Is the gross weight of each truck legal?

	Maximum Gross Weight	Weight of Truck	Number of Boxes	Weight of Each Box
34.	37,250	10,000	250	90 pounds
35.	28,000	12,000	150	100 pounds
36.	35,000	20,000	110	150 pounds
37.	40,000	18,000	294	75 pounds
38.	42,500	12,500	425	60 pounds
39.	34,000	10,250	529	45 pounds
40.	24,000	12,500	143	80 pounds

DO YOU WANT TO EXPLORE SOME MORE?

1. Contact your state's motor vehicle department. Ask about the requirements to get a chauffeur's license. Find out how old you have to be. Find out what tests you have to take. Find out where and when the tests are given.

2. Plan a short trip using a road map. Figure out what roads you will take. Figure out how many miles you will travel. Figure out how long it will take you to get there.

3. Go to a place of business that employs local truck drivers. Talk to several drivers. Ask them what their jobs are like. Ask them what they like and don't like about their jobs.

4. Are you interested in other jobs in the trucking industry?

   - **A material handler** loads the truck so the driver can make deliveries. The material handler arranges the items on the truck in the order they will be delivered.

   - **A truck driver's helper** helps load and unload the truck at the customer's location. Sometimes, the helper drives the truck.

   - **A dock worker** loads and unloads freight at a loading dock. An experienced dock worker can advance to a local truck driver's job.

   - **A long distance truck driver** usually drives a tractor-trailer on long trips. Often, the trips may take several days.

   While you can do these jobs without all the math skills listed in this booklet, you can do your work better if you do have math skills. You also may get a chance to move up to a better job if you can do your work well. Part of doing your work well is doing the math needed on the job.

GLOSSARY

Asterisk (*):	a mark that tells you to look at the bottom of the page for a meaning, or definition, of the word.
C.O.D.:	"cash on delivery." The customer must pay the local truck driver a specified amount for the package before it can be delivered.
Chauffer's license:	a special driving permit for persons employed to drive motor vehicles.
Delivery route:	the roads a local truck driver takes to make all the stops or deliveries.
Dispatcher:	a person who decides each day what deliveries will be made and who will make the deliveries.
Dolly:	a small platform on wheels. The load is put on top of the platform and can be wheeled to a different place.
Glossary:	a list of words with their definitions.
Hand truck:	a metal frame that has handles at one end and wheels at the other. A metal edge is slid under a heavy load and the load is tilted off the ground. The load can then be wheeled to a different place.
Light truck:	weighs less than three tons. Examples are mail trucks, bread trucks, and department store delivery trucks.

ANSWER SHEET

Practice Exercise A

1. 3:15
2. 45 minutes
3. 50 minutes
4. 10:05 a.m.
5. 2:10

Practice Exercise B

6. 51.8
7. 113.7
8. 73.8
9. 89.7
10. 49.0

Practice Exercise C

11. 3; 25 pounds
12. $36.20
13. $146.15

Practice Exercise D

14. legal
15. not legal
16. not legal
17. legal
18. not legal
19. not legal
20. legal

Practice Exercise E

21. 12:27 p.m.
22. 35 minutes
23. 1 hour 26 minutes
24. 11:10 a.m.
25. 10:35 a.m.

Practice Exercise F

26. 10.2
27. 133.2
28. 86.2
29. 47.9
30. 110.2

Practice Exercise G

31. (a) 1.4; (b) 28.2; (c) 5; (d) 94.8
32. $6.25
33. $7.25

Practice Exercise H

34. legal
35. legal
36. not legal
37. not legal
38. legal
39. not legal
40. legal